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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/533,006

04/28/2005

Hideki Moriyama

BAN-05-1097

1709

35811 7590 03/04/2009  
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EXAMINER

LISTVOYB, GREGORY

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

03/04/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/533,006	<b>Applicant(s)</b> MORIYAMA ET AL.	
	<b>Examiner</b> GREGORY LISTVOYB	<b>Art Unit</b> 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 December 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,5,7-22,36 and 38-46 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-2,4-5, 7-22,36 and 38-46 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/25/2008 has been entered.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-2, 4-5, 7-22, 36 and 38-46 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The following new limitation of claim 1: l+m+n+100 is unclear.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

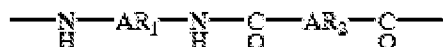
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A person shall be entitled to a patent unless –

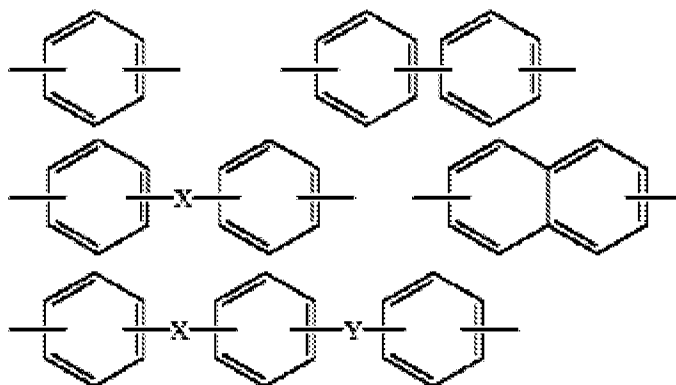
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 4-5, 9-14, 20-22 rejected under 35 U.S.C. 102(b) as being anticipated by Handa et al (WO 01/68340, cited with equivalent US Patent 6589663), herein Handa or Tsukuda et al (US Patent 6274220), herein Tsukuda.

Handa discloses the following polyamide structure, which meets the limitations of Claims 1 (see Column 3, line 65):



Where Ar 1-Ar3 are:



where X and Y can be SO<sub>2</sub>

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Regarding Claims 10-14, 17-18, 20-21 Handa discloses an aromatic polyamide film, structure of which meets the limitations of Claim 6 and 9, having Young modulus within 6000 -40000 N/mm<sup>2</sup> (6 -40 Gpa) (Column 21, Claim 5), thickness of 4-6 microns (Column 21, Table 3) and surface roughness (light retardation), within 0.5-25 (Column 21, Claim 4).

Regarding Claims 20 and 21 Handa discloses the birefringence values for a biaxially oriented film. He expresses birefringence as a Plane orientation coefficient equal to average of birefringence in Machine and Tangential directions (MD and TD). (Column 13, line 30). Planar orientation coefficient varies from 0.11 to 0.6 (Table 3 and Claim 4, Column 21). In examiner's opinion, birefringence in both directions is not equal, since the film is oriented unequally in MD and TD directions. Therefore, for Comparative example 4 (Table 3), which has a planar orientation coefficient of 0.11 birefringence in TD direction is less than 0.1. Therefore, limitations of Claims 20 and 21 are met.

Tsukuda teaches copolyamides with structure identical to one claimed in Claim 1 (see Column 6, line 20) with Young Modulus of 9.8 GPa and above (Column 4, line 20), having structures, meeting the limitations of Claims 7 and 9 (Columns 8 and 9, Example 1).

Since the above structure identical to one in the Application's Specification, it inherently meets the requirements on Light transmittance, Young Modulus and thermal shrinkage of Claims 2,10, 12- 14, 20-22

Claims 1-2,4-5, 7, 9-14, 20-22 rejected under 35 U.S.C. 102(b) as being anticipated by Teramoto et al (US 4833214) or Tsukuda et al (JP 07-149892) herein Tsukuda 1.

Teramoto teaches a polyamide, comprising 9,9 bis(4-aminophenyl) fluorene and terephthalic acid (see Abstract and Table 1), which corresponds with Structure 1 of the Application examined.

Tsukuda 1 teaches the polyamide copolymer with structure, which meets the limitations of Claim 1, Structure (1)

Since the above structure identical to one in the Application's Specification, it inherently meets the requirements on Light transmittance, Young Modulus and thermal shrinkage of Claims 2,10, 12- 14, 20-22.

Claims 1-2, 4-5, 7-22, 36, 38-39, 41, 42 rejected under 35 U.S.C. 102(b) as being anticipated by Harris et al (US Patent 5580950), herein Harris.

Harris discloses a polyamide, applied as an optical member in LCD displays. The structural formula (I) (Column 5), meet the limitations of Claims 1. Note that than r, p and q are not equal to 1, the structure of Harris's Formula (1) meets the limitations of Claim 1.

In addition, polymer disclosed in Example 1 meets the limitation of Claim 1, structure 2, since Harris uses the same monomer (2,2'-bis(trifluoromethyl)-4,4'-diaminophenyl) used in the Application examined.

Since the above structure is identical to one in the Application's Specification, it inherently meets the requirements on Light transmittance, Young Modulus and thermal shrinkage of Claims 2, 10, 12-14, 20-22, 36, 38-39.

In reference to Claim 7, polyamides of Groups I and IV can be identical, since R16 and R17 are defined as aromatic groups.

Since the above structure is identical to one in the Application's Specification, it inherently meets the requirements on Light transmittance, Young Modulus and thermal shrinkage of Claims 2, 10, 12-14, 20-22, 36, 38-39.

Claims 1-3, 7, 10-15, 22, 36, 38-39 are rejected under 35 U.S.C. 102(b) as being anticipated by Murakami et al (US Patent 7054049), herein Murakami.

Murakami teaches a transparent optical film for LCD display that has excellent optical characteristics for realizing the uniform retardation distribution (Abstract).

Murakami discloses a polyamide structure, which meets the limitations of Claims 1, 22 (Column 13, Formula 22).

Note that than  $r$ ,  $p$  and  $q$  are not equal to 1, the structure of Murakami 's Formula (22) meets the limitations of Claim 1.

Most preferable film thickness is within the range of 5 to 150 microns (Column 20, line 50), meeting the limitations of Claims 11 and 24.

The retardation value of the film is within the range -90 nm to 75 nm, meeting the limitations of Claims 17-18.

Since the above structure identical to one in the Application's Specification, it inherently meets the requirements on Light transmittance, Young Modulus and thermal shrinkage of Claims 2,10, 12- 14, 22, 36, 38- 39.

In reference to Claim 7, polyamides of Groups I and IV can be identical, since R16 and R17 define as aromatic groups.

Claims 1, 7- 9, 22 rejected under 35 U.S.C. 102(b) as being anticipated by Elfert et al (US Patent 4217227), herein Elfert.



Elfert discloses a copolyamide films with variety of structures, meeting the limitations of Claim 1 (see Column 6, line 30).

Regarding Claim 7, Elfert teaches copolyamide, comprising structures I and IV, whereas both components can be present at the ratio between 10 to 90 mol %, preferably 15 to 50 mol%. (Columns 2 and 3, structures I and IV, Claim 1).

Regarding Claim 8, Elfert teaches copolyamide, comprising structures II and IV, whereas both components can be present at the ratio between 10 to 90 mol %, preferably 15 to 50 mol%. (Columns 2 and 3, structures I and II, Claim 1).

Regarding Claim 9, Elfert teaches copolyamide, comprising structures III and IV, whereas both components can be present at the ratio between 10 to 90 mol %, preferably 15 to 50 mol%. (Columns 2 and 3, structures I and II, Claim 1).

Claims 1-2, 10-15, 22, 36, 38-39 rejected under 35 U.S.C. 102(e) as being anticipated by Yamaoka et al (US Publication 2004/0100599), herein Yamaoka.

Yamaoka teaches a method for producing a polyamide, applied as an optical member in LCD displays. Structure 22 and preferred structure 23 meet the limitations of Claims 1, 22.

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Since the above structure identical to one in the Application's Specification, it inherently meets the requirements on Light transmittance, Young Modulus and thermal shrinkage of Claims 2,10, 12- 15, 36, 38- 39.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 40-46 rejected under 35 U.S.C. 103(a) as being unpatentable over Harris or Tsukuda or Murakami or Yamaoka or Handa or Teramoto as applied to claims 1-2,4-5,7-22, 36, 38-39 above, and further in view of Vargo et al (US patent 6232386) herein Vargo.

Harris or Tsukuda or Murakami or Yamaoka or Handa or Teramoto discloses a polyamide, applied as an optical member in LCD displays (see discussion above).

Harris or Tsukuda or Murakami or Yamaoka or Handa or Teramoto does not disclose the use of his polyamide a part of solar batteries, optical fibers and optical waveguides.

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Vargo teaches polymer composites used as an optical element in (Column 15, line 5). He discloses the use of his polymer in non-linear optical devices, which can be considered lens. The above compositions include polyamides.

Therefore, it would have been obvious to a person of ordinary skills in the art to use Harris or Tsukuda or Murakami or Yamaoka's polymer as an optical element in above applications, since their polyamide combine excellent optical properties with high Young modulus, moldability, chemical resistance and durability, thus, meeting the requirements for the above elements of various optical devices.

### ***Response to Arguments***

Applicant's arguments filed on 11/25/2008 have been fully considered but they are not persuasive.

Regarding amendments to claim1, new rejections under 35 USC 102(b) based on Teramoto et al (US 4833214) or Tsukuda et al (JP 07-149892) are introduced.

In reference to Harris, Murakami, Handa and Tsukuda, applicant argues that the claimed structures are different from ones claimed. However, applicant does not disclose the specific differences between the above formulas.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to GREGORY LISTVOYB whose telephone number is (571)272-6105. The examiner can normally be reached on 10am-7pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Rabon Sergent/  
Primary Examiner, Art Unit 1796

GL